

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method for mapping higher brain function to map a higher brain function while a body of a subject is in a resting state or in a predetermined active state, ~~characterized by comprising~~

an fMRI mapping step to map a brain function of the subject by functional magnetic resonance imaging,

a head portion structural image acquisition step to acquire a head portion structural image of the subject by the magnetic resonance imaging in a state that a headgear having a predetermined marker is mounted on the head portion of the subject,

a three-dimensional image combining step to create a three-dimensionally combined image showing the brain function and the head portion structure of the subject simultaneously by three-dimensionally combining the brain functional image obtained by the fMRI mapping step and the head portion structural image,

an optical probe mounting step to specify a position on the headgear where an optical probe that is used for near-infrared spectroscopy is mounted based on the three-dimensionally combined image and to mount the optical probe at the specified position, and

an NIRS measuring step to map the brain function of the subject by the near-infrared spectroscopy in a state that the headgear loaded with the optical probe is mounted on the head portion of the subject.

Claim 2 (currently amended): The method for mapping higher brain function described in claim 1, ~~and characterized by that~~ wherein during the optical probe mounting step, a marker corresponding to an activated portion of the brain determined based on the brain functional image included in the three-dimensionally combined image is specified from the markers on the headgear determined based on the head portion structural image included in the three-dimensionally combined image and an optical probe for irradiation of near-infrared light and an optical probe for detection of the near-infrared light diffused from the brain are mounted in pairs near the specified marker on the headgear.

Claim 3 (currently amended): The method for mapping higher brain function described in claim 2, ~~and characterized by that~~ wherein the optical probe for irradiation and the optical probe for detection are arranged apart by a predetermined distance across a corresponding marker.

Claim 4 (currently amended): The method for mapping higher brain function described in claim 3, ~~and characterized by that~~ wherein a distance between the optical probe for irradiation and the optical probe for detection or a direction of arranging the optical probe for irradiation and the optical probe for detection is determined based on a shape of the activated portion of the brain, a physical condition of the headgear, a positional relationship with other adjacent optical probe or a theoretical analysis result of brain optical propagation.

Claim 5 (currently amended): The method for mapping higher brain function described in claim 1, ~~2, 3 or 4, and characterized by~~ further comprising a headgear manufacturing step to manufacture the headgear and during the headgear manufacturing step the headgear for the subject's exclusive use tailored to each subject is manufactured.

Claim 6 (currently amended): The method for mapping higher brain function described in claim 5, ~~and characterized by that~~ wherein during the headgear manufacturing step a plurality of the markers are evenly embedded at predetermined intervals into the headgear.

Claim 7 (currently amended): The method for mapping higher brain function described in claim 5 ~~or 6, and characterized by that~~ wherein during the headgear manufacturing step the head portion of the subject is covered with a flexible film such as a kitchen wrap film, then a molding material is applied on the film in a flexible condition so as to make the headgear molded into a form of the head portion of the subject and the markers are embedded into the molding material before the molding material is cured.

Claim 8 (currently amended): A headgear for mapping higher brain function that is used in the method for mapping higher brain function described in claim 1 ~~through claim 7,~~

~~characterized by~~ comprising a gear body formed into a shape of the head portion of the subject with a molding material of either a kneaded dental rubber elastic impression material of

binary kneaded-type or a heat distortion resin material attached in a flexible condition to the head portion of the subject and then cured and a plurality of makers embedded at predetermined intervals into the molding material prior to curing.

Claim 9 (currently amended): The headgear for mapping higher brain function described in claim 8, ~~and characterized by that~~ wherein a positioning portion that corresponds to either one or both of a nose and an ear of the subject is formed with the molding material prior to curing.

Claim 10 (currently amended): The headgear for mapping higher brain function described in claim 8 ~~or 9, and characterized by that~~ wherein the maker is an adipose sphere.

Claim 11 (currently amended): The headgear for mapping higher brain function described in claim 8, ~~9 or 10,~~ wherein the gear body is formed by applying the molding material on a flexible film ~~such as a kitchen wrap film~~ that is attached to the head portion of the subject in advance.

Claim 12 (new): The method for mapping higher brain function described in claim 2 further comprising a headgear manufacturing step to manufacture the headgear and during the headgear manufacturing step the headgear for the subject's exclusive use tailored to each subject is manufactured.

Claim 13 (new): The method for mapping higher brain function described in claim 3 further comprising a headgear manufacturing step to manufacture the headgear and during the headgear manufacturing step the headgear for the subject's exclusive use tailored to each subject is manufactured.

Claim 14 (new): The method for mapping higher brain function described in claim 4 further comprising a headgear manufacturing step to manufacture the headgear and during the headgear manufacturing step the headgear for the subject's exclusive use tailored to each subject is manufactured.

Claim 15 (new): A headgear for mapping higher brain function that is used in the method for mapping higher brain function described in claim 5 comprising a gear body formed into a shape of the head portion of the subject with a molding material of either a kneaded dental rubber elastic impression material of binary kneaded-type or a heat distortion resin material attached in a flexible condition to the head portion of the subject and then cured and a plurality of makers embedded at predetermined intervals into the molding material prior to curing.

Claim 16 (new): The headgear for mapping higher brain function described in claim 15 wherein a positioning portion that corresponds to either one or both of a nose and an ear of the subject is formed with the molding material prior to curing.

Claim 17 (new): The headgear for mapping higher brain function described in claim 15 wherein the maker is an adipose sphere.

Claim 18 (new): The headgear for mapping higher brain function described in claim 15 wherein the gear body is formed by applying the molding material on a flexible film that is attached to the head portion of the subject in advance.